

Submission #125

What is your first name?

Terry

What is your last name ?

Yates

What is your organization name?

Town of Cary, NC

What is your job title

Smart Cities Program Manager

What is your email address?

terry.yates72@gmail.com

What is your phone number?

919-469-4014

What country is the Applicant located in?

United States

What state or province is the Applicant located in?

North Carolina

What is the name of the Applicant?

Terry Yates

What type of entity is the Applicant?

Municipality

Knowledge Resources - Getting help with your application

I understand the content of the KR boxes are meant to provide me with useful guidance, although I will not be awarded any special consideration for following the links.

Applicant Information Page

Will any other local governments be joining this application?

Cary is a founding member of the North Carolina Next Generation Network (NCNGN). NCNGN is also a founding member of US Ignite's Smart Gigabit Communities program. NCNGN represents Duke University, NC State University, UNC at Chapel Hill, Wake Forest University and the City's and Towns of Cary, Carrboro, Chapel Hill, Durham, Raleigh and Winston Salem. NCNGN fully supports this application. Cary is collaborating with several of these agencies on Smart City Projects.

What is the total population of the Applicant and all supporting local governments?

161,078

Would the Applicant be interested in participating as a test case for the development of an international smart cities certification process?

Yes

Smart Cities Capacity

Has the Applicant completed any smart cities projects in the last 2 years?

Yes

Please list smart cities projects completed within the last 2 years. [4 Points]

Aquastar (completed in September 2016) is the Town's innovative, advanced meter infrastructure system that replaced monthly manual meter reads with a wireless system that collects multiple remote meter reads per day. The Town replaced about 60,000 residential and commercial water meters in Cary and Morrisville with new, state-of-the-art meters. The following are some key city goals that were met with this project:

- Allows for better leak detection and faster response
- Reduces the cost of customer service operations, including special meter reads
- Reduces carbon emissions by taking meter readers off the road (in one year, 10 meter readers drove 71,000 miles and used 7,000 gallons of fuel)
- Reduces the amount of unaccounted water loss due to theft or inaccurate meters
- Increases billable revenues, accurately records consumption, and reduces unaccounted for water loss
- Provides accurate, useful information for forecasting, facilities planning, rate setting, infiltration and exfiltration management.
- Provides system data across multiple departments (Finance, Utility, Public Works and Water Quality).
- Environmental, lighting and other sensors can easily be added to this network.

Total project budget was \$17.9 million. Through operational savings and increased revenue, the project is estimated to have a benefit of \$27.5 million over the 17 year project life. This project required intensive multi-departmental collaboration including extensive citizen outreach and communication.

Advanced Traffic Management System (ATMS) (completed May 2016) encompasses 112 traffic cameras, 51 video detection sensors, over 100 miles of fiber optic cable and 199 state-of-the-art traffic signal controllers. It is one of the most advanced ATMS in North Carolina. The ATMS helps engineers fine tune signal timing, react to traffic incidents more efficiently and maneuver cameras to

better identify traffic issues, all of which help improve the flow of traffic and improve safety.

The following are some key city goals that were met:

- Over 100 miles of fiber optic cable network that link network
- 112 CCTV cameras at key intersections
- Fiber optic connections to fire stations, parks and other Town facilities
- 200 state-of-the-art traffic signal controller devices
- Live video feeds shared with NCDOT Statewide Transportation Center, Cary's E911 Center, Fire Depart, Cary TV and local media
- New software allows engineers to design and program specific features such as leading pedestrian crossing and full protected left turn by time of day
- Wink TV - Closed circuit TV cameras send video feeds to Cary's signal system specialists and the Cary's government access channel. This allows motorists to tune in during weekday rush hour programming blocks (6-9 a.m. and 4-6 p.m.) to view real-time traffic conditions before they drive, enhancing their trip planning abilities.

The project was completed under estimated \$2.9 million dollar budget.

Is the Applicant currently undertaking any smart cities projects?

Yes

Please list smart cities projects currently being undertaken. [4 Points]

The Simulated Smart City Project incubates IoT technologies powered by public/private partnerships that create an ecosystem to test, develop and showcase solutions on our campus to drive economic growth and improve the quality of life of citizens by harnessing technology, especially technology that leads to smart outcomes. It utilizes Cary's Town Hall campus (a condensed area of community centers, parks, office buildings, parking decks, etc) which represents a mini city. Utilizing existing facilities and networks creates a cost-effective ecosystem for corporations, startups and students to experiment with next generation IoT technologies.

This project accomplishes three key economic and sustainable city goals. First, departmental subject matter experts (SME's), citizens and outside technical advisers identify specific business problems that need to be solved in the categories of Transportation (Mass Transit, Smart Parking), Energy and Utilities Infrastructure, Public Safety, Citizen Engagement (Public Wi-Fi Hotspots), Community Apps and create featured use cases. Various Smart City and IoT technologies are then tested to determine if they efficiently solve these various business problems, integrate with new and existing platforms, and provide value to citizens and staff before wide scale enterprise deployment. Second, it provides startups and new businesses the ability to showcase their solutions to clients in a live, real world environment. Third, it creates a smart cities educational incubator for local college and high school students to get real world experience.

Below is a summary of the various technologies, with rough partner contribution costs and benefits, that have been deployed as part of the Simulated City Project:

Smart transportation parking sensors - Herb Young Community Center and Parking Deck. Provide availability to citizens and usage to staff (\$20,000)

Wi-Fi proximity infrastructure beacon's facility usage statistics to better leverage resources and citizen programs. (\$10,000)

Smart energy controllers - campus light fixtures to provide energy savings without impacting public

safety. (\$35,000)

SCADA utilities pump station sensors – live data to staff mobile devices for alerts and faster response. Waste water sensors - gathering Opioid data to proactively combat this serious issue. (\$10,000)

Building Automation Energy System sensors - system optimization to save energy. (\$5,000)

Integrating IoT data from the above projects above into Cary's open data portal and Salesforce CRM workflows to automate the work ticket submission process. (\$20,000)

We would like to integrate the above technology slated for enterprise deployment into our other smart cities efforts (Hwy 55 connected vehicles, Aquastar, crowd-counting video, drones, etc.) to get a 360-degree view of our citizens and provide real time information across all departments to enhance and improve service. This grant will provide insight to make this possible.

How will the Applicant implement smart technologies in a way that can be shared with multiple departments or agencies? [4 points]

Cary's Digital Transformation Effort is creating a 360-degree view of our citizens by redesigning a core platform strategy to enhance service delivery, promote data sharing among multiple departments and provide better insight to our citizens' needs. We want to do this by interconnecting existing wired and wireless networks, high speed fiber and Aquastar, ATMS, SCADA, SAS data management, smart building automation and other internal systems and securely integrating them with new cloud-based platforms such as ArcGIS, Cisco Kinetic and ultimately into a Salesforce Customer Relationship Management (CRM) solution. Any new smart city and IoT application slated for wide scale enterprise deployment through the Simulated Smart City Project are required to have open API's so they can also be integrated. This creates a "OneCary" single source of truth for our citizens and staff. This grant opportunity will provide us insight to make this possible.

How will the Applicant drive smart cities innovation? [4 points]

Using Salesforce as a foundation, Cary, NC is leveraging a people-centered approach with One Cary, an omni-channel government strategy for its citizens. People and their needs are at the center of the One Cary approach and help the Cary staff to develop use-cases for delivering information both from and to citizens using various platforms including experiments using Amazon's Alexa and other emerging technologies.

There are three notable examples of how Cary applies innovation to smart city efforts within the One Cary framework. They include the Simulated Smart City (SSC) Project, the Innovation Analytics Lab and the Garage for Innovation.

First, the SSC Project is deployed on the Cary Town Campus. This is a condensed area of community centers, parks, office buildings, parking decks, etc. It also includes a E911 Public Safety Answering Point, 311 Call Center, Traffic Management Center, IT Data Center and high-speed fiber

connectivity. New and innovative smart city technologies can be deployed at a low cost and tested quickly to determine if they are efficient, sustainable, intergratable and solve real-world problems. They can be scaled up or removed based on how well they perform.

Second, the Innovation Analytics Lab empowers Cary staff and citizens to harness the power of open data to create insights, uncover trends, and discover stories. This is done by allowing people to try various data analytics products in a lab setting with free reign to explore Cary's open data, giving the user the chance to experience building visual reports from scratch.

Third, The Garage for Innovation is an outlet for experimental development projects where small teams across the town test a hypothesis, receive early customer feedback, and determine if it fits for their target audience. Project teams get expert guidance with technical and industry advisors, and a lightweight release process to help teams get their experiments out quickly. Monthly hackathons will offer a fast, one-week event to team up, hack, and push ideas forward. The teams primarily use the Salesforce CRM solution to develop these projects, however existing smart city systems, the SSC and Cary's open data portal can be used for these projects.

How will the Applicant support a variety of procurement routes? [4 points]

The Town of Cary has a number of procurement vehicles and options at our disposal. The North Carolina General Statutes segment procurement into 4 categories, with many having additional exceptions to competitive bidding that are allowed under certain circumstances. As those relate to Smart Cities, all four areas could potentially be used: purchase (materials, supplies, licenses, etc.); construction and repair; professional services/mini-brooks act/qualifications based selection; and "everything" else. A few examples of said exceptions include using GSA schedule 70 for I.T. procurements, state contracts, and/or group and cooperative purchasing programs. Additionally, I.T. has been granted a "catch-all" RFP option that allows for the Town to source all 4 categories of procurement in a single action, with certain criteria and parameters in place (e.g. contracts awarded to "best overall proposal"), and thus allowing for a great deal of flexibility and innovation. Within the various categories, vehicles such as incentive-based contract or performance contracting, PPPs, managed services, or other innovative approaches can be used. For example, construction and repair contracts can take a "carrot" approach with incentive-based contracting provisions to expedite the project timeline. Moreover, PPPs are specifically authorized under NCGS 143-64.31 and are procured via a qualifications based selection. Furthermore, the Town strives to innovate as it relates to procurement if and when possible. Recently, the Town implemented a number of on-call contracts to shorten the procurement timeline between identifying a need, to actual acquisition. Finally and as it relates to Smart Cities, the Town is actively working to set up RFPs which would allow for "demo/test to award of a contract" procurements, as well as a "pipeline" for R&D which would be facilitated by the use of the Town Hall Campus.

Does the Applicant have a smart cities plan or set of policies?

Yes

Please upload a copy of the plan or policies. [4 Points]

[plans-1608-North Carolina-Terry Yates-Terry Yates.pptx](#) [1]

Does the Applicant have a dedicated staff position, office, or program area for smart cities?

Yes

Please discuss the Applicant's smart cities leadership capacity. [4 Points]

Cary has smart cities leadership in every department and across every level of their organization. They have a Smart Cities Program Manager located in the Information Technology Department. They lead a Smart Cities Committee that includes primary and alternate members from the Administration, Information Technology, Public Safety, Transportation & Facilities, Water Resources, Utilities, Sustainability, Public Works and Parks and Recreation Departments. This committee meets monthly to discuss our smart city implementation efforts and to create policies and guidance. This committee would use the Smart Cities Readiness Workshop to further define Cary's Smart City Strategy and to identify ways that current deployments can be interfaced together to create the "OneCary" single source of truth.

Key Stakeholders

Cary realizes that its most important stakeholders are citizens and businesses that call Cary home. In our definition the smartest smart city is one that uses the opportunities that technological and non-technological innovation bring to citizen engagement. Cary residents strongly identify with the neighborhood where they live and a number of initiatives are examining how a neighborhood-based outreach and engagement effort might strengthen Cary's ability to target and deliver services. We will use our incredible pool of citizen boards and commissions as a first tier for engagement. Additionally, we have long-standing volunteers involved in many aspects of municipal operations who are always responsive to opportunities to engage with new efforts.

Through the Chamber of Commerce we are connected with both small and large businesses in Cary. They partner with us to engage these important stakeholders and would likely be happy to assist in engaging business leaders attend the event.

We have a strong relationship with our main electric utility, Duke Energy. Duke has expressed interest in engaging further on smart city and innovation and has sent a team to our Town Hall to learn about the Simulated Smart City. Also, Cary-based technology firms like SAS are important partners and have already provided valuable feedback at brainstorming sessions convened by Cary and the Department of Homeland Security.

Cary is in the heart of the North Carolina Triangle Region which includes three major universities, a community college, multiple large municipalities and the Research Triangle Park. We are a founding member of the North Carolina Next Generation Network (NCNGN). NCNGN is also a founding member of US Ignite's Smart Gigabit Communities program. NCNGN represents Duke University, NC State University, UNC at Chapel Hill, Wake Forest University and municipalities including Cary, Carrboro, Chapel Hill, Durham, Raleigh and Winston Salem. Cary is collaborating with these agencies on Smart City Projects. These projects include regional agency fiber connectivity, smart city lab testing and collaboration, smart transportation initiatives, unmanned aerial vehicle (UAV) policy work, etc. We are also members of regional organizations such as NCR!OT and Research Triangle Cleantech Cluster. We work with these organizations to promote our smart city efforts abroad and to get outside technical advice. These agencies and organizations fully support this application and will attend the event and collaborate as part of this grant to integrate our smart cities technology at the regional level.

Cary values and caretakes our relationships both at home, regionally, and at the state and federal levels. We will use this firm foundation to engage with our stakeholders at all levels. We believe that

the mentoring in this grant will help us to create a successful long-term engagement strategy section in our forthcoming Smart City/Strategic Innovation Plan.

Is the Applicant working closely with a utility on smart cities implementation?

Yes

Please upload a copy of the letter of support. [4 Points]

[utility-1608-North Carolina-Terry Yates-Terry Yates.pdf](#) [2]

Which local government leaders will be attending at least two hours of the event?

- City Manager's Office
- City Councilor's Office
- Department of Innovation
- Fire Chief
- Information Technology
- Mayor's Office
- Planning
- Police Chief
- Resilience
- Sustainability
- Transportation
- Water/Wastewater

Please list at least one organization representing residents or neighborhoods that you would invite to the event.

Cary Information Services Advisory Board (ISAB), Environmental Advisory Board (EAB)

Please list at least one organization representing workers that you would invite to the event.

Cary's Town Manager's Office Staff

Please list at least one organization representing tourists that you would invite to the event. This could include a tourism board.

Cary Chamber of Commerce

Please list at least one organization representing disadvantaged citizens that you would invite to the event.

Dorcas Ministries, Building Bridges, Project Phoenix

Please list at least one organization representing businesses that you would invite to the event.

Cary Chamber of Commerce

Please list at least one academic institution that you would invite to the event.

Wake Technical Community College, North Carolina State University

Please list at least one utility that you would invite to the event.

Duke Energy, Cary Finance/Utilities

Please list at least one state or federal agency that you would invite to the event.

Department of Homeland Security, NC Firstnet

Is the Applicant prepared to pay for the cost of venue rental, food, audio-visual, and all other direct event expenses?

Yes

Smart Cities Assessment Page

How would you describe your level of engagement with smart cities strategies for the Built Environment?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for the Energy?

Currently in place

How would you describe your level of engagement with smart cities strategies for Telecommunications?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for Transportation?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for Water and Wastewater?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for Waste Management?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for Health and Human Services?

Low priority

How would you describe your level of engagement with smart cities strategies for Public Safety?

Taking steps in the next year

How would you describe your level of engagement with smart cities strategies for Smart Payments and Finance?

Currently in place

Instrumentation. How would the Applicant characterize implementation progress for optimal instrumentation?

Over 50%

Connectivity. How would the Applicant characterize implementation progress for connectivity?

Over 50%

Interoperability. How would the Applicant characterize implementation progress for adhering to open standards?

Over 50%

Interoperability. How would the Applicant characterize implementation progress for using open integration architecture?

Over 50%

Interoperability. How would the Applicant characterize implementation progress for prioritizing use of legacy investments?

Over 50%

Security & Privacy. How would the Applicant characterize implementation progress for publishing privacy rules?

Partial

Security & Privacy. How would the Applicant characterize implementation progress for creating a cybersecurity framework?

Over 50%

Data Management. How would the Applicant characterize implementation progress for creating a citywide data policy?

Partial

Computing Resources. How would the Applicant characterize implementation progress for considering a cloud computing framework?

Over 50%

Computing Resources. How would the Applicant characterize implementation progress for using an open innovation platform?

Over 50%

Computing Resources. How would the Applicant characterize implementation progress for having access to a central GIS system?

Complete

Computing Resources. How would the Applicant characterize implementation progress for having access to comprehensive device management?

Complete

Analytics. How would the Applicant characterize implementation progress for achieving full situational awareness?

Over 50%

Analytics. How would the Applicant characterize implementation progress for achieving operational optimization?

Over 50%

Analytics. How would the Applicant characterize implementation progress for achieving asset optimization?

Partial

Analytics. How would the Applicant characterize implementation progress for pursuing predictive analytics?

Partial

Sectors

Please pick three Sectors

- Built Environment
- Transportation
- Water and Wastewater

Build Environment

What is the Applicant's biggest challenge around the built environment? [5 Points]

Cary's biggest challenge around the built environment is sustainably meeting the needs of a rapidly growing population within the context of our changing community. With a commitment to the triple-bottom-line of simultaneously meeting the needs of people, with maintaining a healthy environment, and a healthy economy Cary must innovate to maintain its overall level of citizen service and quality of life. Once a small crossroads town, Cary has grown to be a mid-sized community of national distinction. Since 1990, Cary's growth tripled from ~43,000 to more than 133,000 by 2010. By 2040, regional projections suggest that the Town will reach a population of at least 193,000. Not only has Cary identified a need to shift away from its greenfield-development-funded-fast-growth model to new infill and redevelopment models, but it has also determined that in the delivery of its built services that continued innovation will be needed to keep the roads maintained, safe, and prepared for vehicular technological changes and changing citizen expectations. Further, while delivering these services the expected impacts of growth on energy costs in our buildings will demand innovation, as will the expected increases in rain and their impact on stormwater systems. Cary knows that past success does not dictate future success—and with continued population growth smart city innovation will help us to grow sustainably while meeting the needs of all of our citizens.

How will the Applicant deploy smart technologies to accelerate the livability, workability, sustainability and resilience of Applicant's built environment? [10 points]

Cary's Comprehensive Plan, the Imagine Cary Community Plan (CCP), articulates the Town's vision/values and sets a course for achieving Cary's desired future. Livability, workability, sustainability, and resilience are all key themes that can be found throughout the plan in the policies and implementation items. A key strategy around the built environment is the identification of five Destination Centers, Cary's premiere mixed use centers that include an integrated mix of commercial, office, and residential development. Destination Centers are intended to contain the greatest development intensities found in Cary and be regional destinations. These areas are characterized by:

Urban designs frame the street with multi-story buildings and active public spaces

Most parking needs are met using structured parking

Buildings of three to seven stories will predominate

A well-defined and interconnected street and pedestrian network

Multiple and central outdoor public gathering spaces create focal points

With Destination Centers identified to be the special areas in Cary with the most density and intensity of development, they are ideal locations to deploy smart technologies in partnership with developers and property managers. Further, there are a number of policies in the CCP's "Serve" Chapter 8 that could yield inspiring results through technology, including resiliency & adaptation, tree canopy, air quality, open space, energy efficiency, and sustainable energy practices. As our community really thinks outside of the box regarding new models for delivering quality and responsive infill and redevelopment, technology will be an essential part of a full engagement, communication, and civic trust strategy with both citizens and the business community.

Examples of smart city technologies are available in some of the buildings that Cary owns and operates and around our community. Town Hall campus has free wifi both indoors and out. The parking deck at Town Hall has a pool car system kiosk that is operated through a web-based check out system and an Executime card check in for employees. Town Hall campus, and five other municipal buildings have open protocol building automation systems, which allow web-based monitoring and diagnosis of problems, and allow for automation to conserve energy (like evening set-backs). Our community partnered with Duke Energy to be among the first all-LED streetlight communities. Our downtown fountain has LED lighting (with color) and staff is experimenting with different ways to use the lighting to engage with citizens through technology. The forthcoming downtown parking deck will have smart lighting, electric vehicle charging stations, stormwater sensors, wi-fi, video surveillance, and digital signage/kiosks.

We will use this SCC experience to strengthen our vision and commitment to using smart technologies to accelerate livability, workability, and sustainability, all of which are supported by the CCP.

How will the Applicant deploy smart technologies in the built environment in a way that helps vulnerable or marginalized people or neighborhoods? [5 points]

Destination Centers, by design, will be mixed use areas with housing, employment, and shopping and entertainment options. They will have more housing options, more housing diversity, and a natural focus on transit. With this mix of uses and the planned intensity of development, many people will have the opportunity to live and/or work in these areas. By deploying smart technologies in these areas with more people, there is a better chance to provide the same opportunities to interact with technology for all residents.

Additionally, we believe that engaging the organizations that serve marginalized people (as mentioned earlier in this application) and engaging with those populations themselves, will allow us to determine how their needs may differ from our less-marginalized citizens. We have a commitment to serving all of our citizens and the best way to do so is by asking, listening, and working with those communities to deploy the services they need and want in the most effective manner possible.

Instrumentation & Control

Over 50%

Connectivity

Over 50%

Interoperability

Partial

Security & Privacy

Over 50%

Data Management

Over 50%

Computing Resources

Over 50%

Analytics

Over 50%

Transportation

What is the Applicant's biggest challenge around transportation? [5 Points]

Cary's biggest challenge around transportation is the pressure on transportation infrastructure to continue to function effectively and efficiently with the additional users that come with population growth.

Proper coordination between transportation and land use is increasingly important as the population of Cary continues to grow. Cary's population tripled between 1990 and 2010; this growth trend is expected to continue through 2040, but at a slower rate. New growth will have positive impacts on many aspects of the community, and it also places pressure on the transportation infrastructure to continue to function effectively and efficiently with the additional users.

Nationally, the population is aging as the baby boomer generation reaches retirement age and life expectancies increase. This trend is accelerated for warm southern states like North Carolina,

and Cary's population reflects this trend. The fastest growing segment of Cary's population is nearing retirement age; Cary's population of over 65 individuals is projected to continue to increase in the future. The aging population has several impacts on transportation. Older individuals drive less than other age groups and tend to make fewer trips at peak travel times. Many older individuals choose not to drive—or are not able to drive—and must rely on walking, transit, or friends and family for trips. As a result, demand may increase for non-driving modes of travel and travel options at non-peak times.

How will the Applicant deploy smart technologies to accelerate the livability, workability, sustainability and resilience of Applicant's transportation systems? [10 points]

The Town of Cary's Comprehensive Transportation Plan, the MOVE chapter of the Imagine Cary Community Plan, cites the importance of changing market preferences and technologies. Two areas the Town has deployed smart technologies, and would like to improve and expand smart technologies, are GoCary (transit system) and traffic management.

Technology has an effect on transit. Surveys have shown uncertainty—particularly worrying about missing the bus or taking the wrong bus—is one of the leading reasons people choose not to take transit. Technology improvements have helped allay these fears. Smart phone apps can show bus GPS locations and arrival times. Free Wi-fi and video surveillance keep riders connected and safe. GoCary, like all transit providers in the Triangle, uses these systems to alleviate uncertainty associated with transit and make transit a more appealing option.

As street infrastructure becomes built out and mature, there is an increasing focus on managing the existing infrastructure rather than building new infrastructure. Demands on the existing infrastructure can be better managed through intelligent transportation systems that marry technology and infrastructure, which can yield cost savings and limit the need for building new infrastructure. Signal timing and phasing enhancements, real-time signal timing adjustments, signal preemption for transit vehicles, and real-time communication systems are examples of technologies that monitor the infrastructure usage and adjust the system response to demand to manage congestion. Smart City projects such as DSRC Connected Vehicle technology currently being tested on Cary's major thoroughfares will further assist in managing congestion.

How will the Applicant deploy smart technologies in transportation in a way that helps vulnerable or marginalized people or neighborhoods? [5 points]

Transit plays an important role in helping vulnerable or marginalized populations such as seniors, local workforce members, and others in need of affordable housing and transportation choices. As Cary grows, GoCary also has the opportunity to grow and accommodate an increasing number of trips to provide more options for all citizens in Cary.

The main factors that influence the demand for transit service are population and employment densities. The Imagine Cary comprehensive plan includes recommendations for additional service on existing routes and new destinations for service. Additional service for existing routes includes:

Increased frequency

Sunday service

Expanded daily hours

New destinations for service include:

Wake Technical Community College

Downtown Raleigh

Crossroads (Destination Center)

Beaver Creek (mixed use area in Apex, NC)

Raleigh Durham International Airport

Service on Weston Parkway (employment area)

Service to Western Cary

Service on Cary Parkway

Incorporating smart technologies in transit service for those living and/or working in Cary will close the digital divide and being to provide a more inclusive town.

Instrumentation & Control

Over 50%

Connectivity

Over 50%

Interoperability

Over 50%

Security & Privacy

Over 50%

Data Management

Partial

Computing Resources

Partial

Analytics

Partial

Water and Wastewater

What is the Applicant's biggest challenge around water and wastewater? [5 Points]

Cary's biggest challenge around water and wastewater is preparing for future population increases by maintaining and adding to Cary's foundation of sustainable water and sewer services.

The Imagine Cary Community Plan includes policies designed to respond to the challenges and opportunities for Cary's public services, and to provide reliable, affordable, and excellent services and facilities to the community in a way that protects the environment and anticipates growth and changes occurring throughout the region. Some of the policies related to water and wastewater include:

Provide services and facilities for current and future generations that balance high quality and affordability

Provide safe, reliable water and wastewater service

Encourage environmentally responsible stormwater management

Integrate concepts of resiliency and adaptation in planning practices

It's important to proactively address the issue of water and wastewater service provision, which will be affected by growing populations, redevelopment and infrastructure needs, and volatile weather patterns that will subject the region to threats like flooding and droughts. Water is becoming a regional issue and interjurisdictional coordination is necessary to maintain adequate service while reducing risk. In order to protect Jordan Lake and other water sources, the Town will continue to foster collaboration between regional partners.

How will the Applicant deploy smart technologies to accelerate the livability, workability, sustainability and resilience of Applicant's transportation systems? [10 points]

The Town of Cary has deployed smart technologies at water and wastewater plants and has upgraded the network for these facilities. A connected network with real time data has been deployed to improve efficiency. One of the Town's goals is to improve efficiency as related to spills, leaks, and pump station operations. We also believe there is capacity to improve water conservation. The Town would like to find ways to increase data sharing and hope to deploy mobile devices to staff to connect our people with our data.

In 2011 Cary did a study of how much energy was used in our operations. The results highlight what those in the water and wastewater field have dubbed "the water-energy connection". This is the reality that water is heavy and it takes a lot of energy to move and treat it. So even in the typically water-rich southeast water conservation is still an important conservation action. In Cary at the time of the 2011 study water and wastewater accounted for a full 53% of all of our energy use, followed by our fleet at 24%, followed by facilities at 16%, and streetlights at 7%.

The energy study informed the Strategic Energy Action Plan, which is a targeted approach to reducing our operational energy use and associated cost and greenhouse gas emissions. As part of the implementation of that plan the Utilities Department (our water and wastewater utility) conducted an energy audit in 2017 of all three wastewater plants, and our one water plant. And a key finding was that, surprise! We could be using the data from our SCADA systems to better drive efficiency and operational decision-making.

The Aquastar system provides a lot of data to citizens, and the way the Town has taken that information and used it to deliver high-quality service has received high praise. For example, when water use higher than normal for a period of time the Town will call or reach out to the citizen. If a response is not received within a period of time and the water use remains high then the water is turned off. This saves water and reduces potential property damage. But could more citizens be using that data by receiving text alerts? Most have not set up that functionality that alerts them to high water use or when they are close to the next billing tier. This could be a point of exploration regarding data and citizen use of that data.

How will the Applicant deploy smart technologies in water and wastewater in a way that helps vulnerable or marginalized people or neighborhoods? [5 points]

Making data available to all of our citizens can improve the digital divide. For example, it would be helpful to have weather information, such as the potential for flooding, tied to other relevant data. Citizens could take action to prevent or minimize damage from such weather-related events. This type of data sharing with citizens and Town staff is exactly what we'd like to study and implement. This type of initiative would assist in the creation of citizenship mentality through collaboration between the Town and the community.

Having smart city technologies will help people in Cary's planning area who may not have water and sewer connections yet. Town staff will be able to determine the best routes in providing services to them.

Instrumentation & Control

Over 50%

Connectivity

Over 50%

Interoperability

Over 50%

Security & Privacy

Over 50%

Data Management

Over 50%

Computing Resources

Over 50%

Analytics

Over 50%

Certify Application

Can you confirm that Applicant has read and agrees to the privacy policy presented here for this application?

Yes, I agree.

Please upload a letter from the Mayor's Office or City Manager's Office demonstrating support. [4 points]

[mayor-1608-North Carolina-Terry Yates-Terry Yates.pdf](#) [3]

Can you confirm that Applicant agrees to have the Readiness Event adhere to the core principles of the Smart Cities Council?

Yes - We will adhere to the core principles of the Smart Cities Council.

Can you certify that the Application is complete in all respects and ready for submission?

Yes - The Application is complete in all respects and ready for submission.

Are you authorized to submit this application on behalf of the Applicant?

Yes - I am authorized to submit this application.

Source URL: <https://smartcitiescouncil.com/node/5268/submission/1608?destination=node/5268/submission/1608>

Links

[1] https://smartcitiescouncil.com/system/files/webform/scc_grants/plans/plans-1608-North%20Carolina-Terry%20Yates-Terry%20Yates.pptx

[2] https://smartcitiescouncil.com/system/files/webform/scc_grants/utility/utility-1608-North%20Carolina-Terry%20Yates-Terry%20Yates.pdf

[3] https://smartcitiescouncil.com/system/files/webform/scc_grants/mayor-letters/mayor-1608-North%20Carolina-Terry%20Yates-Terry%20Yates.pdf